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AUTHOR Hall, William S.
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ABSTRACT

Equally divided by sex, grade level, and socioeconomic status, 360 subjects were used in two major experiments. Experiment 1 (Sentence Recall) attempted to answer three questions: (1) What are some of the developmental differences between standard and nonstandard speech? (2) To what extent are these differences sex and social class bound? (3) To what extent is the nonstandard variant racially bound? Experiment 2 (Interaction-Communication) investigated the developmental differences in the use of standard and nonstandard English in a situation utilizing stimulus variation. Results revealed that socioeconomic status, race, age, and sex were not equally robust. Sex was found to be the least important variable, while race and age were found to be most important. The recall task showed that blacks performed better than whites in terms of percentages correct when given stimulus sentences in nonstandard dialect, and that whites performed better than blacks when standard dialect was used. It was further found that blacks used standard and nonstandard expressions to the same degree in the language comprehension and production study. No racial differences were found with regard to listening comprehension. For both blacks and whites a positive correlation was found between the number of standard forms repeated correctly and the number of spontaneously produced standard structures. (Author/HS)

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Author: William S. Hall, Ph.D.
Assistant Professor
Department of Psychology
Princeton University
Princeton, New Jersey

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Abstract

Two major experiments were done. The first of these, on Sentence Recall, replicated and extended from a developmental perspective existing research on Standard and non-Standard English. The second of these investigated the developmental differences in the use of Standard and non-Standard English in a situation utilizing stimulus variation. A total of 360 Subjects provided the basic data for the research reported here. One hundred eighty of them were males; an equal number were females. One-half of the subjects were from the lower socio-economic group, and the other half were from the middle socio-economic group as determined by the Hollingshead Scale (Hollingshead, 1958).

An overall analysis of the major independent variables used in this research, SES, race, age, and sex were not found to be equally robust. Sex was found to be the least important variable, while race and age were the most important. The recall task showed that blacks perform better than whites in terms of percentages correct when given stimulus sentences in non-Standard dialect. Whites performed better than blacks when stimulus sentences were in the Standard dialect.

The language comprehension and production study revealed that black speakers used Standard and non-Standard expressions to the same degree regardless of whether their listener was white or black. On the comprehension measure black and white listeners did equally well regardless of whether the message was delivered in Standard or non-Standard form.

For both black and white message producers, a positive correlation was found between the number of Standard forms repeated correctly and the number of spontaneously produced Standard structures. This suggests a common ability underlying these two tasks.

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William S. Hall

Princeton University
Princeton, N. J.

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Chapter I

Introduction

A. Statement of the Problem

Poor classroom performance, as well as low scores on standardized tests among poor and many Black-American children, continues to plague the American Public School. To be sure, various programmatic procedures, and attempts to implement relevant research findings have been successful in alleviating many of these problems. Unfortunately, many of these programs and their research designs have been influenced by either a social pathology, or a deficit model. In the last few years, we have witnessed a shift away from these approaches to a newer one that focuses on differences instead of deficits and pathologies. This can be observed rather forthrightly in research on Black American Dialect, i.e., non-Standard English. Despite some politically motivated reluctance to acknowledge the existence of a Black Dialect (Labov, 1969, p. 33), there is general agreement that many inner-city children use consistent forms of non-Standard English. This researcher believes that focusing on language differences as one source of poor performance will help to clarify some steps in improving the education of black children.

B. Review of Pertinent Literature

Most of the research on variations in American English Dialects falls broadly into two areas: (1) research concerned with structural differences; and (2) research treating communication possibilities.

Regarding structural differences, the research has primarily revolved around descriptions of how the language of children from low-economic groups differs from that of those from middle-income groups. Specifically, the concerns in this regard have been two. The first being a general linguistic description of language differences across socioeconomic status lines at various stages of development. The second has been an attempt to describe the function of language in different dialect-speaking communities.

1. General Linguistic Description. The structural differences observed have been phonological, semantic, and syntactical. For example, Labov and Robins (1965) noted the following phonological differences in the low income dialects of New York City: (1) reduction of /r/ intervocalically before a consonant and finally; (2) reduction of /L/ before a consonant, finally and intervocalically; (3) reduction of final consonant; (4) substitution of initial /ð/ by /d/ (as in "this") (5) substitution of initial /θ/ by /f/ (as in "both"); and (7) substitution of final /ð/ by /v/ (as in "with"). Moreover, these researchers found that phonological context plays a role in the simplification of final clusters; for example, clusters containing /t/ and/d/ are simplified before a word beginning with a consonant but may be preserved, depending on the vowel, before a word beginning with a vowel. A more recent review of phonological differences (Baratz, 1969) supports these earlier observations of Labov and Robins (1965).

Research on syntax has further focused on differences in the speech production of low-income children when compared with that of children from middle-income backgrounds (Stewart, 1967; Baratz and Povich, 1967).

All of the foregoing research emphasizes the fact of the non-Standard dialect's being different, but not deficient. This is so because many grammatical relationships can be expressed with equal facility in each of them. Some examples adapted from Baratz (1969) will both serve to illustrate this point as well as to specify some of the forms which will be reported in the studies below.

Insert Table 2 Here

While Table 2 may suggest that the syntactic differences are invariably used by speakers of these respective dialects, some recent work by Mitchell (1969) cautions us that their occurrence is somewhat contingent upon particular linguistic environments at a level larger than the phonological. As one example of this, Mitchell mentions that copula delection sometimes occurs for predicate adjective usage, as in, "He all right." However, it may not always occur in this environment, for example, "She is stubborn." Mitchell has also listed noun phrase, locative, negation, and two other environments in which the copula may or may not be preserved. The probabilistic aspects of the various environments in which the non-Standard dialect can be observed is not necessarily a problem for the linguist (but, see Suppes, 1971). However, it is one for the psychologist. One way to study this is through information-processing procedures which build into the underlying cognitive steps probabilistic assumptions.

Other research investigating dialect differences has been concerned with word associations (Entwisle, 1970), use of the cloze procedure (Peisach, 1965; Williams and Wood, 1971), word identification (Eisenberg, Berlin, Dill and Frank, 1968) and sentence repetition (Baratz, 1969) and comprehension as assessed through picture identification (Osser, Wang, and Zaid, 1969). The last two studies are of special concern to us here. The results from these investigations are not uniform. Osser, et. al, found that low-income children repeated sentences with a significantly greater mean number of total errors as well as critical errors than did the white middle-income children, even when errors due to known dialect differences were eliminated. Moreover, they incorrectly identified the appropriate picture in the comprehension task with significantly greater frequency. Baratz (1969), on the other hand, using a sentence repetition task, found racial differences in favor of one's own dialect. White children did significantly better with certain Standard English forms, whereas black children did significantly better with certain forms restricted to their own dialect.

2. The Function of Language. Some investigators have focused on the function of language. While it is possible to study the function of language via age, race, and SES, most of the literature to date has selected SES as the primary independent variable. Especially prominent in this regard is the work of Bernstein. Bernstein (1964) compared the language of low and middle income British speakers. He

conceptualized the language of these groups as reflecting two codes, a restricted or an elaborated one.

Lewis and Freedle (1972) studied the developmental origin of language functioning for infants age 3 months to 2 years with SES and sex as the primary variables. Their findings suggest that the mother's influence on the infant may be a prime determinant in yielding significant SES differences at these early ages. Although the reciprocal effect to the infant's behavior eliciting particular maternal responses by situations was also noted. Williams and Naremore (1969) elicited sentences in home interviews from 40 fifth and sixth-grade childen from low and midddle to high income backgrounds. Both black and white children were studied. They found that socio-economic status and the topic of the discussion were more significant factors in the proportion of usage of certain elaborated structures than race. Low-income black children used these structures substantially less frequently than low-income white children.

An additional group of studies has employed age as a primary variable. Krauss and Glucksberg (1967) investigated the ability of kindergarten, first, third, and fifth grade children to communicate information to a peer. They found that initial performance did not differ for the four groups. As the number of trials increased, the older children made fewer errors, whereas the youngest children showed virtually no improvement over trials. These results were interpreted as indicating that it was the speaker's failures in encoding the messages which led to errors rather than the listener's failures in decoding the messages. Moreover, these researchers suggest that encoder ability increases over the age range studied and that decoder ability increases from fifth grade to adulthood. Heider, Cazden, and Brown (1968) examined the ability of low-income white and black children and middle-income white children to encode the properties of the abstract figures used in the Krauss and Glucksberg (1967) research. They found differences in the encodings of middle income-and low-income children. The middle-income children were much more fluent and gave many more images per picture.

All of the above studies have investigated the function of language by employing at least one and at the most two of the following variables: SES, age, and race. One of the studies to be reported below has examined all three variables.

3. Summary of Pertinent Literature. Several conclusions can be drawn from the foregoing research: (1) there are differences in the syntactic, and phonological rules used in various linguistic communities; (2) it is likely that rules for all the grammatical relationships that can be expressed in the grammar of the Standard English dialect can be found in deviations from this dialect; (3) racial and class differences have been found in the language performance of children--many of these differences can be attributed to dialect differences, e.g., children can more accurately repeate sentences generated by rules unique to their own dialect than sentences generated by rules outside their dialect; and (4) differences in adequacy of message within dialects either become more marked as the children mature or disappear.

Chapter II

Method

A. The Sentence Recall Investigation: Experiment I

1. The Questions for Research: The Sentence Recall Experiment was designed to answer the following three questions:

   a. What are some of the developmental differences in the extent to which the language of non-Standard speakers contains structures not typically present in that of the speakers of Standard English?

   b. To what extent are these developmental differences sex and social class bound?

   c. To what extent is the non-Standard variant of Standard English racially bound?

2. Subjects: A total of 360 Subjects were employed in this phase of the research. One hundred-eighty of these were boys and an equal number were girls. One-half of all subjects were black (N = 180) of whom 90 were lower class. The remaining half of the subjects were white. The same social class breakdown in terms of number was used with white Subjects. An equal number of Subjects were sampled at each of three age levels (i.e., 120 at year 5; 120 at year 8; and 120 at year 10). Social class level was determined by the most frequently used indices in social science research, namely education and income (Hollingshead, 1958). The design for Experiment I is shown in Table 1.

Sex and Race of Subjects

Age and SES of Subjects		Male		Female	
		Black	White	Black	White
Age 5	Middle Class	N	N	N	N
	Lower Class	N	N	N	N
Age 8	Middle Class	N	N	N	N
	Lower Class	N	N	N	N
Age 10	Middle Class	N	N	N	N
	Lower Class	N	N	N	N

Table 1. Design for Experiment I

3. Instrument: All Subjects were given a Sentence Repetition Test that was age appropriate. This instrument was developed and recorded by Dr. Joan Baratz and her staff at the Education Study Center, Washington, D.C.[1] All Subjects were examined individually. The utterances generated by this procedure were recorded and transcribed later for scoring.

4. Scoring and Analysis Procedure: The data generated by each Subject was analyzed to ascertain what happened to the following constructions:

Standard Constructions	Non-Standard Constructions
1. Third person singular	1. Non-addition of third person-S
2. Presence of copula	2. Zero copula
3. Negation	3. Double negation
4. If-Subject-Verb	4. Use of ain't
5. Past markers	5. Zero if-verb-subject
6. Possessive marker	6. Zero past morpheme
7. Plural	7. Zero possessive morpheme
	8. Use of "be"

The logic of the work conducted as Experiment I called for a comparison across ages, sexes, classes, and ethnic groups. All responses were scored by two persons. The interscorer agreement was 90%. Difficulties in scoring were resolved by the Principal Investigator.

B. The Interaction-Communication Investigation: Experiment II

1. Procedure: The basic procedure used in this experiment was adapted from the work of Krauss and Glucksberg (1967) on referential communication. The task consisted of a teacher and a student who discussed pictures so as to place them correctly. The experiment was designed to allow for the measurement of the frequency with which the aforementioned grammatical forms occurred in the free productions of Ss, and to measure the degree of comprehension of the receiver of the messages. The messages were the free productions of the teachers. All of the Subjects used in this experiment were male. Subjects were divided into two categories: teachers and receivers. They came from three age groups (5, 8, and 10). Each teacher instructed 8 students, two from each SES group, but of his own age.

The teachers were given sheets containing various designs. Each design was numbered on the sheet. Subjects serving as students were given a sheet of paper divided into 8 numbered spaces. Although the spaces were blank they corresponded to the numbered spaces that the teachers had. The students were also given 10 cards, eight of them containing designs corresponding exactly to the designs that the teachers had in his possession. The arrangement for Experiment II

[1]Permission to use the instrument as well as a copy was received from Dr. Joan Baratz.

has been portrayed in Figure 1. Moreover, subjects could hear but not see each other during this experiment.

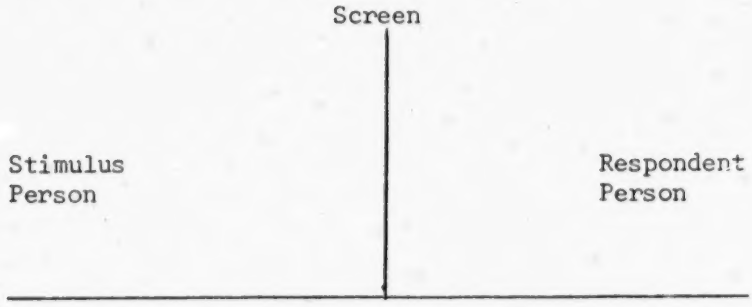

Figure 1. Graphic Representation of the Arrangement for Experiment II.

2. Scoring of the free productions. The task required teachers to describe each design on their sheets of paper one at a time using reference numbers to indicate the position of each picture. Teachers and receivers were allowed to interact freely at the verbal level.

3. Scoring for comprehension. All Subjects were given two trial runs to insure comprehension of the rules of the task. The complete task was recorded. Four different sets of designs were used. Each Subject involved in the interaction used each of the sets only once to avoid transfer. Subjects were scored as follows: (1) one point for each correctly placed design; (2) one-half point for each correctly placed design which was in the wrong direction; and (3) zero for an incorrectly placed design.

Chapter III

Results: Sentence Recall

Table 3 presents some regression results using all Subjects. These analyses allow us to evaluate the relative contribution of our four main variables in the Sentence Recall Task. The results across the 14 grammatical forms clearly demonstrate that race and age are the most powerful variables influencing our results. SES was moderately powerful. Sex was the least consistently powerful of all. For the sake of brevity we shall attend primarily to race and age effects, and occasionally to SES.

Figure 2 and Table 4 reveal a striking regularity about the recall data. When Standard English was used in the stimulus sentence, the following sequence of proportions correct was obtained from the 8 year old black lower, black middle, white lower, and white middle groups: .501, .595, .584, .791, respectively. For the same groups responding to non-Standard stimulus sentences we got the following correct repetitions: .300, .298, .134, .129. Notice that if the proportions for any pair of the first four numbers increase, the corresponding pair of numbers for the lower sequence decreases. Thus the first number .501 and the third .584 represents an increase in magnitude and their corresponding entries in the second series of .300 and .134 represent a decrease in magnitude. The same holds approximately for the proportion correct responses for ten year old Subjects. When responding correctly to Standard sentences they provide the following: .716, .829, .784, .897; and when responding to non-Standard: .460, .377, .174, .217.

Before explaining the next result, we must first define the term "translation." If a Subject gave back a form from a Standard sentence in the non-Standard dialect, a "translation" was said to have occurred. Similarly, if a non-Standard form was presented and the Subject gave back a Standard form, a "translation" was held to have occurred. An inverse relationship held when we examined the proportions of the 8 year old black lower, black middle, white lower, and white middle Subjects in translating the Standard stimulus sentences into non-Standard ones. The pattern of correlations was : .198, .243, .286, .444, respectively. Now, the proportion of "translations" for these same groups when converting non-Standard into Standard forms yielded: .217, .145, .075, .058, respectively.

For the ten year olds the pattern of translations was similar to that of the 8 year olds. When given the Standard sentences the pattern was: .293, .410, .462, .495, in comparison with the one when the non-Standard sentences were the stimulus: .195, .103, .056, .026.

Perhaps it will be useful here to recall an interpretation by Baratz (1969). She suggests that the two dialects are different coding schemes. We take this to mean that one who is most familiar with non-Standard English as observed for the lower-class blacks in our data will tend to encode in his short-term memory sentence information corresponding to the non-Standard code.

Correspondingly, one who is most familiar with Standard English as observed for white middle-class Subjects in our data will tend to encode in his short-term memory sentence information corresponding to the Standard code.

This idea can be applied to our data in the following way. If the incoming stimulus for a black lower-class Subject is in his familiar dialect he doesn't have to do any extra work in encoding the information since it already is in his preferred dialect. Thus, his short-term semantic memory is in a non-Standard state. If he retrieves his information in the same form as it is coded in his memory, in a large percentage of cases, this means that he will get a large number of non-Standard structures correct. This same black Subject also receives Standard sentences. By the above argument he will tend to encode many of these in non-Standard form. When it is time to retrieve them, he should give back many "translations", since by assumption he tends to retrieve information in terms of the representation in his semantic memory.

Exactly the reverse argument holds for the middle-class white Subjects. Briefly, theywill get a large proportion of Standard structures correct, and will also tend to give a large proportion of translations from non-Standard into Standard. A reflection on the data described above will show that this is exactly what happens. Middle-class blacks and lower-class whites fall somewhere in between these two extremes. Presumably this means that they have no clear-cut dialect preference since they are perhaps equally familiar with both Standard and non-Standard forms. The regularity of these results holds for both 8 and 10 year olds.

Thus, while some of these findings have been reported by Baratz, as well as being replicated here, we have extended her coding idea in an information-processing sense. This extension helps us explain the regularity between "translation" scores and correct repetition scores as a function of race, SES, and age.

A further implication which follows from the encoding idea is that there should be a positive correlation between the proportion of Standard English when a non-Standard sentence is given as the stimulus. The calculated rank-order correlation in this regard was .802 ($p < .05$). Further, the aforementioned results suggest that there should be a positive correlation between the proportion of non-Standard sentences correctly imitated and the proportion of sentences translated into the non-Standard when a Standard sentence is given as the stimulus. Here the rank-order correlation was .667 ($p < .05$).

When these two correlations are pooled the result yields a rho of .936 ($p < .01$). These calculations are based on a pooling of all seven of the grammatical forms. One can compute similar relationships at the level of each grammatical form (3rd person singular, copula, negation, etc.) for the Standard sentences and another for the non-Standard sentences. These correlations are presented in Table 5.

Insert Table 5 About Here

The significant positive correlations in Table 5 can be said to provide evidence for the information-processing assumption that Subjects encode stimulus sentences into their most familiar, or preferred dialect and tend to retrieve information from their short-term semantic storage in primarily the same form as it exists in the memory store.

The only surprise that occurs in Table 5 is for negation where we fail to find a positive correlation for either age group. In fact, it looks as though the correlation may actually approach significance in the negative direction. We can provide a post-hoc explanation for this and retain the coding idea. Let's consider the possibility that in both dialects double negation has become, or is becoming, as acceptable as single negation. Then, this would mean that receiving a non-Standard double negation stimulus would result in the encoding of the double-negation in semantic memory. This would hold for both races. Similarly when either race receives a sentence with a single negation they code it in exactly that form. Thus, they will produce very few translations from non-Standard to Standard and vice-versa. Further, they will both get high correct repetition scores. This will produce the desired negative correlation.

Several other regularities were found to exist in the recall data across age, race, and SES levels. These regularities can be gleaned from the data presented in Table 6. First, there was a significant tendency to increase the proportion of correct imitations from age 8 to 10. This occurred for all four groups and all Standard sentence structures. Twenty-eight out of a maximum of 28 comparisons showed this improvement which is significant by a sign test, $p < .001$, two-tailed test. A similar comparison for non-Standard structures showed that 23 out of 27 show this effect. The violations occurred for the non-Standard "If" construction (and one tie), and the non-Standard 3rd person singular. By a sign test, 23 out of 27 comparisons is significant ($p < .002$, two-tailed test). In general, it seems that age leads to improvement in correct repetitions. This seems to operate for both Standard and non-Standard structures.

Insert Table 6 Here

There was a significant tendency for middle-class blacks to perform better in the absolute level of correct imitations for Standard structures with 13 out of 14 comparisons showing the effect ($p < .002$, two tailed test). On the other hand, the lower-class blacks out performed middle-class ones in the proportion of correct imitations for non-Standard English with 14 out of 14 comparisons showing the effect ($p < .001$, two-tailed test). Thus, it seems that socio-economic status is associated with doing well in Standard English, at least for blacks.

White middle-class Subjects were significantly better in an absolute sense of repeating back correctly Standard sentences than were lower-class whites (14 out of 14 comparisons show the effect: $p < .001$, two-tailed test). However, lower-class whites did not significantly out perform middle-class whites in their ability to repeat back non-Standard forms, with only 4 out of 14 comparisons showing the effect ($p = .18$, ns). Thus, whites present a slightly different pattern from the blacks.

The proportion of translations reveals an almost perfectly inverse pattern to the above results. This relationship is of course expected since the proportion of translations are not independent of the number of correct repetitions within a dialect. Nineteen out of twenty-one comparisons (with 3 ties) show that for the Standard structures there are more translations at 8 years of age than at 10. By a two-tailed sign test this is significant ($p < .001$, two-tailed). An exception to this finding can be seen in the data from the non-Standard structures. Twenty-four out of twenty-seven of these (with a single tie) show the same pattern as observed in the proportions correct. Moreover, the proportion of translations increases significantly from age 8 to 10 when non-Standard structures are the stimuli ($p < .001$, two tailed test). The regularity here presumably has some bearing on any parameter estimation procedure which attempts to account for all the patterns of consistencies found for the imitation data across race, SES, age and type of stimulus sentences.

There is a significant tendency for middle-class blacks to use fewer translations in responding to Standard sentences than lower-class blacks. Thirteen out of 14 comparisons show the effect ($p < .001$, two-tailed). On the other hand, the lower-class blacks use significantly fewer translations into Standard English when the stimulus sentence is non-Standard; 11 out of 14 comparisons showed the effect ($p = .058$, two-tailed). White middle-class Subjects use translations significantly less often than lower-class whites for Standard sentences: 11 out of 13 (one tie) show the effect ($p = .022$, two-tailed). Lower-class whites translate significantly less often than middle-class whites when non-Standard forms are the stimulus: 12 out of 14 show the effect ($p < .013$, two-tailed test). This result is also not in perfect inverse relationship with one of the above points.

Finally, there did not appear to be any truly systematic effects emerging for the deletion scores. This perhaps is not surprising inasmuch as most of the changes occur in the magnitudes of correct and translation scores wherein whatever is gained in one score over age or class is lost in the other. While this is not invariably true, it largely appears to be so.

Rate of Change and Sentence Recall

An Equation for Determining the Significance of the Rate of Change Parameter a

Statistics texts give a standard result for determining the variance of a statistic when the sample size is very large--this is known as finding the formula for the asymptotic variance of a paramenter a. The particular parameter we are interested in comes from the following linear equation:

$$P_2 = P_1 + a(1 - P_1) \qquad (1)$$

This equation says that the quantity P_2 (the proportion of correct repetitions at age 10) is assumed to result from the quantity correct at an earlier time period P_1 (that is, P_1 would be the number of corrects at age 8, say) plus a proportion a of the quantity $1 - P_1$. The parameter a can be regarded as a rate of change over two time periods. Given that we have data which allow us to get sample estimates of the quantities P_1 and P_2 from which we estimate the quantity a we seek to compare this resulting magnitude with another similarly calculated quantity resulting from other independent estimates of P_1 and P_2 obtained from another population of Subjects. The result of obtaining variance statistics for the quantity a will

allow us to test the following idea: is the rate of change for white subjects in responding correctly to Standard English sentences any different from the rate of change for blacks responding to the same sentences? A similar question can then be raised for the rates of change in responding to non-Standard sentences. Also similar questions can be addressed to the problem of whether lower-class blacks are faster (or slower) in their rate of change parameter in responding to non-Standard forms from ages 8 to 10 in comparison with middle-class blacks. The question for whites would be whether those from the lower classes are any different from their middle-class counterparts in rates of change when responding to Standard English.

The asymptotic variance of $\underline{a}$ is given by the following equation:

$$a = \left(\frac{P_2 - P_1}{1 - P_1}\right) \underset{\sim}{a} \eta \left[\frac{P_2 - P_1}{1 - P_1}, \left(\frac{P_2(1-P_2)}{n_2} + \frac{P_1(1-P_1)}{n_1}\right)\left(\frac{1}{(1-P_1)^2}\right)\right]$$

where η represents the normal distribution with mean equal to $(P_2 - P_1)/(1 - P_1)$ with variance V_1 equal to

$$\left(\frac{P_2(1-P_2)}{n_2} + \frac{P_1(1-P_1)}{n_1}\right)\left(\frac{1}{(1-P_1)^2}\right).$$

Note that n_2 represents the number of observations that went into the calculation of the quantity P_2 while n_1 represents the quantity P_1.

Now, a similar quantity is calculated from another pair of observations of P_2 and P_1 so as to estimate another rate of change parameter $\underline{a}$. In order to distinguish these values let us place a prime on them as follows:

$$a' = \left(\frac{P_2' - P_1'}{1 - P_1'}\right) \underset{\sim}{a'} \eta \left[\frac{P_2' - P_1'}{1 - P_1'}, \left(\frac{P_2'(1-P_2')}{n_2'} + \frac{P_1'(1-P_1')}{n_1'}\right)\left(\frac{1}{(1-P_1')^2}\right)\right]$$

Let us agree to call the variance part of this equation for a' by the symbol V_2. Now we wish to test whether these two independent estimates of a and a' are significantly different from each other. The equation to test this is:

$$\left(\frac{a - a'}{\sqrt{V_1 + V_2}}\right) \longrightarrow \eta(0, 1).$$

This means the test is made with respect to the normal distribution with mean 0.0 and variance 1.0.

Comparison of Rates of Change in Correct Responding in the Recall Task

Using the above statistics we find that blacks are not significantly different from whites in their rate of improvement in responding to Standard English sentences ($z = 0.147$). If we interpret this rate of improvement parameter as reflecting underlying abilities in memory, comprehension of language, etc., then we may feel that we are justified in drawing the conclusion that blacks are not inferior to whites in their "learning ability." They do differ, of course, from whites inasmuch as they do not get as many Standard sentences correct as the whites at age 8. But, the rate of change parameter is not dependent upon the starting proportions P_1. It is a measure of rate of change in improvement over two time periods and as such is independent of the starting proportions. The learning parameter a for whites was .489 while that for blacks was equal to .497.

We can calculate another pair of parameters for the rate at which blacks improve in responding to non-Standard sentences over ages 8 to 10 and compare this with the rate of change for whites' improvement in responding to non-Standard sentences. The result of this calculation indicates that blacks have a significantly higher rate than whites in responding correctly to non-Standard sentences from 8 to 10 years ($z = 3.405$). (For blacks the a was .171 while for whites it was .052) The meaning of this result is less clear than the first calculation since whites do not get much exposure to black dialect nor do they feel any cultural pressure to learn black dialect; hence, the higher "learning" rate of blacks in response to non-Standard English may primarily be reflecting opportunities to learn it. But this cannot be the full story: We see that the blacks have a greater opportunity to gain greater competence in black dialect from the ages of 8 to 10, yet their learning rate for non-Standard is only .171 in comparison to a significantly higher rate for Standard English of .497. This suggests that the "learning" rates among the blacks reflect a complex number of factors including responsiveness to the cultural pressure to speak Standard English, and by implication, a corresponding pressure to stop speaking non-Standard. The smaller learning rate of .171 for non-Standard sentences may reflect not only greater memory capacity at the later age and greater familiarity and comprehension of these structures but, in addition the cultural pressure to conform. Hence it is lower.

Another interesting comparison that bears comment is the contrast within the blacks according to SES level. For Standard English the lower-class blacks yielded a rate of improvement = .431 while middle-class blacks had an a of .578. This difference, which is significant, may reflect a complex of factors such that the middle-class blacks show a higher motivation or willingness to gain competence in the Standard forms while the lower-class ones may show a combination of greater antagonism to the Standard forms plus somewhat less direct contact with Standard speakers, with the consequence of having lower motivation and less opportunity for gaining great competence in Standard English. This argument seems to hold up when we examine the "learning" rates for the lower and middle-class whites in response to Standard English. The lower-class Ss had an a = .481 while the middle-class Ss had an a = .505. These were not significantly different. Our reasoning for this pattern again implicates cultural pressure concepts. Since both white

groups have always spoken predominantly Standard English and since there is no corresponding pressure to learn the non-Standard forms (even though there may be many opportunities to experience black dialect, especially among lower-class whites) there is no reason to expect that the two white groups will differ in their learning rates. Our argument somewhat falls short of the mark, however, when we contrast the "learning" rates of the two white groups on their non-Standard English. Here the lower-class whites, who should do better, give only an $a = .052$ while the middle-class whites yield an $a = .107$. This difference is significant and presents us with a puzzle which at the moment we are unable to explain. However, a similar contrast for non-Standard English between lower-class blacks ($a = .220$) versus middle-class blacks ($a = .110$) is significantly different. This presumably can be explained by postulating that lower-class blacks have had greater opportunity to gain competence in non-Standard usage than those from the middle class.

In summary, the overall pattern of results indicates that the blacks (lower and middle class combined) are equal to the whites in their rate of improvement in Standard English from the years 8 to 10. Blacks are superior in their "learning" rate to whites in their response to non-Standard English over the years 8 to 10. Lower-class blacks "learn" Standard more slowly than middle-class blacks, but there is no class difference for the two white groups with respect to their rate of improvement on the Standard forms. For non-Standard the class differences indicate that lower-class blacks are now superior to middle-class blacks, while middle-class whites, surprisingly are significantly better than lower-class whites in their responses to non-Standard forms.

A final comment about the rate parameter $\underline{a}$ may be of value here. Some readers may question in what sense one can claim that the estimate of $\underline{a}$ need not be correlated with the starting proportion P_1. The form of Equation 1 allows us to assert that $\underline{\text{if}}$ improvement at a later time (P_2) is $\underline{\text{never worse}}$ than at the earlier time (P_1) then the parameter $\underline{a}$ will be free to take on values between and including 0.0 and 1.0. This range of values of $\underline{a}$ in no way is influenced by the starting value of P_1 except in the very exceptional case where P_1 happens to represent perfect performance (i.e., where $P_1 = 1.0$). It is in the above sense that we assert that the improvement parameter $\underline{a}$ is independent of the starting value.

Moreover, it may appear to some that even though two values of $\underline{a}$ (estimated from different groups, such as blacks and whites) are equal, one should not conclude that the amount of work that has to be done by the two groups of Subjects to get these same $\underline{a}$ values is somewhat equivalent. This is certainly true; let's pursue this further since it will even strengthen our claim that blacks can at least equal whites in this measure (and perhaps outstrip them as we shall now demonstrate). Suppose whites do very well on Standard English at age 8--say their $P_1 = .80$ (they get 80% of the Standard structures correct at age 8). Now suppose that the improvement parameter $\underline{a}$ for these same subjects is .5; then applying Equation 1 we see that at age 10 they will get 90% of the standard structures correct (since $.80 + .5(1 - .80) = .90$). Now let's contrast this example with blacks who start at a lower level of correct performance on Standard forms (have a lower P_1 value of say .40), but who show the same value on their improvement parameter $\underline{a}$ of .5 over ages 8 to 10. We see by applying Equation 1 that their percentage correct performance at age 10 will be 70% since $.4 + .5(1 - .4) = .70$. Notice

that in an absolute sense these blacks had to "cover more ground" in order to earn this improvement parameter of .5 than the whites. That is, the blacks had to improve by 30% while the whites had to improve by only 10% in order to earn the same learning parameter. From this point of view, even though the blacks still lag behind the whites in their absolute level of correct performance on Standard forms at age 10 (i.e., the blacks still get only 70% at age 10 while the whites get 90% correct); nevertheless, the total amount of learning that blacks had to engage in to earn this rate parameter of .5 was much greater than the absolute amount of learning that the whites had to engage in to earn an a value of .5. Thus in spite of the fact that blacks lag behind whites in absolute performance at each age, they in another sense are superior to whites inasmuch as they were capable of learning a much larger piece of "the linguistic pie" in order to earn the identical parameter of .5. Clearly the manner in which one chooses to "score" the protocols in experimental settings (and by implication the manner in which one wishes to score blacks on some standardized tests) can greatly affect the interpretation of the data. We suggest that greater attention be paid to rates of improvement as useful scores for assessing the functioning of various racial and SES groups, especially since these rate parameters seem to tell quite a different story from the conventional parameters which typically examine only the absolute level of performance such as total percent correct at some specified age.

Chapter IV

Results: Production and Comprehension

Free Production

Eight scores were obtained for each teacher in the interaction task. In all cases the "teacher" was speaking to one of four listeners (a black lower-class listener, a black middle-class listener, a white lower-class listener, and a white middle-class listener), all of the same age as the teacher. For each Subject with whom he spoke, the same two scores were computed: frequency of Standard usage, and frequency of non-Standard usage. Hence, eight scores were obtained.

The four white teachers at age 5 revealed an overall significant Friedman chi-square (14.77, df-7, $p < .05$). This significant effect was due primarily to the strong tendency of these "teachers" to use more Standard than non-Standard constructions regardless of whether they were speaking to black or white students. The mean number of Standard forms used when black students were listening was 11.2 versus a mean number of 0.0 non-Standard forms. When white students were listening the mean number of Standard forms was again 11.2 versus a mean of 0.0 usage for the non-Standard forms. Clearly, these young white 5 year olds seem not to know (or use) any non-Standard forms of the seven types we have chosen to score. In contrast to this, the 5 year old black "teachers" tended to use more non-Standard than Standard forms when speaking to both white and black listeners. They used on the average 1.2 Standard grammatical forms versus 4.5 non-Standard forms when speaking to black listeners, and 2.5 Standard versus 5.2 non-Standard forms when speaking to white listeners. The Friedman analysis of variance, however, for just the 5 year old black teachers failed to reveal a significant overall difference among the groups of listeners.

At age 8, a similar result obtained. The scores for the four black teachers resulted in a significant overall difference (chi square = 22.26, df = 7, $p < .01$). The main source of this significant difference was surprisingly due to a tendency to use the Standard over the non-Standard grammatical forms, irrespective of the listener. For example, they used a mean of 15 Standard forms, and 1.0 non-Standard forms when speaking to black listeners, and a mean of 16.2 Standard forms and 0.5 non-Standard forms when speaking to white listeners. Notice that between the ages of 5 and 8, the black "teachers" shift from using primarily non-Standard to Standard grammatical forms.

The four white teachers, aged 8, yielded a similar overall significance effect (chi-square = 23.15, df = 7, $p < .01$). These white eight year olds used a mean of 40.0 Standard and 1.2 non-Standard forms when speaking to black listeners, and a mean of 35.0 Standard and 0.5 non-Standard forms when speaking to white listeners.

The analysis showed an overall significance level for both black and white teachers at age 10 ($p < .05$ in both cases). All teachers showed a preponderance of Standard grammatical forms when speaking to both black and white listeners.

When speaking to blacks, the black "teachers" used a mean of 33.7 Standard and 6.7 non-Standard forms. These same black teachers used a mean of 26.2 Standard and 7.5 non-Standard forms in speaking to whites. The four white teachers used a mean of 40.5 Standard and 1.5 non-Standard forms when speaking to blacks. When speaking to whites they used a mean of 46 Standard and 2.0 non-Standard forms.

Thus, in general, the free production data suggest the following: the 5, 8, and 10 year old "teachers" use primarily the same language when speaking to whites as they do to blacks. The younger teachers speak predominantly non-Standard English if they are black and Standard if they are white. Sometime between the ages of 5 and 8, the black "teachers" undergo a shift in which dialect becomes their predominant one (at least it appears to be the predominant one within the confines of this experimental task, whether their speech in the everyday milieu is the same is unknown); i.e., they shift from non-Standard to mostly Standard grammatical forms. Similarly, whites of age 8 and older use predominantly Standard forms and do so regardless of whether they address white or black listeners. (See Table 7 for the frequency of usage of Standard and non-Standard forms over age, race, and SES from the teachers in the free production task).

Insert Table 7 about Here

There is a significant increase in the proportion of time that a Standard form is used when comparing the productions of 8 year old black teachers with 5 year olds from the same racial group (Mann-Whitney U test, $p = .014$). Also, there is a significant decrease in the proportion of time that a Standard form is used when comparing the productions of 10 year olds with 8 year olds (Mann-Whitney U test, $p = .014$). Apparently, older black teachers have either become socially more conscious of the implications of using Standard or non-Standard forms and have somehow reacted to this by slightly increasing their usage of non-Standard forms. While this percentage decrease was not dramatically lower, it was significant by the above Mann-Whitney U test.

The white teachers show a different age effect. The proportion of Standard usage decreases from age 5 to 8 (Mann-Whitney U test, $p = .014$). This probably means that while the 5 year olds were not at all familiar with black dialect (and so did not use it), the 8 year olds were at least aware of the existence of black dialect, and occasionally made use of it in this interaction task. No significant difference exists between the proportion of time Standard forms are used in comparing 8 year old white teachers with 10 year olds from the same racial group (Mann-Whitney U test, $p = .243$).

Comprehension

The number of pictures correctly placed was use to assess the adequacy of comprehension (the ability of the listener to comprehend the message provided him by the "teacher"). There is also a possibility that this communication score actually reflects both the adequacy of the message provided by the teacher as well as the ability of the listener to understand and respond appropriately to that message.

A Friedman Analysis of Variance was computed for the 8 year old listeners' number of correct placements of cards (there was a maximum score here of 8 correct placements). There was no overall significance obtained from any of the analyses, either in combination (chi-square -0.73, df = 3, $p < .80$) or singly ($p < .05$, in all cases). This is interesting because it suggests that any one of the four groups of listeners (black lower, black middle, white lower, white middle) was able to respond as well as any other. Furthermore within an age group, there was no difference in the ability of the listener to get items correct when a black teacher formulated the message or when a white teacher formulated it (Mann-Whitney U test, $p = .343$). Similarly, when the ten year old listeners are considered, it made no difference in the correctness of responding whether a black or a white teacher formulated the message (Mann-Whitney U test, $p = .443$). Thus it seems that the adequacy of the messages provided by the teacher is not related to his race. Moreover, it appears that the races do not differ in their ability to correctly place the cards on the basis of the information provided by the teachers. At the level of ability measured by this communication task, it appears that no differences between the races can be found.

Only one effect was significant in evaluating the card placements. The ten year olds did significantly better than the eight year olds (Mann-Whiteney U test, $p = .003$). We acknowledge, though, that the source of this particular difference is confounded by message quality produced by the older teachers and/or the possible improvement in the comprehension of their older listeners.

Chapter V

Interrelationships

Relationship across Imitation, Comprehension, and Production at Diglossic Levels of Language Use

Rank order correlations between the number of correct recalls of Standard sentences (all seven types were summed for this score) and the number of Standard grammatical forms produced by the teachers in the communication task were done. For the black teachers who were also subjects in the recall task (N = 12, over all three age groups), a significant positive correlation of .79 ($p < .01$) was obtained. This correlation relates the number of spontaneously produced grammatical forms to the number of correct repetitions of Standard sentences in the recall task. Similarly, for the white teachers, a rank order correlation of .68 ($p < .05$) was significant which also indicated that those subjects who spontaneously produced many Standard grammatical constructions of the seven types (3rd copula, etc.) also tended to correctly repeat the Standard sentences in the recall task. Thus there seems to be a common ability which underlies performance in the recall task with performance in the free production task.

On the other hand, and quite important for its implications, is the correlation between the number of correct recalls on the non-Standard stimulus and the number of spontaneously produced non-Standard grammatical forms, obtained from the blacks acting as teachers in the communication study. This correlation failed to be significant (rho = -.08). This suggests that since these blacks are primarily speaking in the Standard dialect (recall they use a greater proportion of Standard constructions in their free productions than non-Standard for the above seven types except for the five year old teachers), one need not expect to find a strong relationship between how well they do in recall of non-Standard and how many non-Standard structures they produce. Given that there is a conflict between how one is to speak, and given that the dominant dialect is winning out after the age of five, one might expect that the momentary lapses into the non-Standard dialect which occur in free productions need not bear any clear-cut relationship to their ability to call upon their knowledge of the black dialect in correctly imitating these structures as they had to do in the recall task. Further, removing the five year old black teachers from this last correlation did not alter this effect. So, while a separate analysis by age should be done in later studies relating recall, comprehension, and production tasks *à la* diglossic subjects, for our present purposes it appears that mixing the ages of the teachers within the same analysis (due to small sample size) has not greatly altered the main findings.

Similarly, the white students across the three age levels (N = 11) who had scorable responses for both free productions of non-Standard forms and number of correct imitations of non-Standard stimulus sentences from the recall task, did not yield a significant correlation: rho = .26, $p < .05$. This is reasonable since one certainly would not expect to find any systematic relationship for subjects who, for all intents and purposes, do not speak the non-Standard dialect.

Additional correlations among other pairings of the variables did not yield any significant results. Thus correlating Standard imitations with non-Standard productions, and non-Standard imitations with Standard production usage, did not yield any significance for either the black or the white teachers considered separately.

Relationship of Recall Scores to Comprehension Scores Obtained from the Listeners in the Communication Task.

Another pair of scores is of interest in eventually helping us to untangle mental operations relating recall, comprehension, and production given that the subjects in the experiment are diglossic. Correlations were run between the number of correct picture placements in the communication task and the number of correct imitations of Standard and non-Standard forms for blacks and whites computed separately. It was found that the black listeners (who of course had to comprehend the messages which their teachers gave them in order to correctly place the pictures) yielded a significant and positve correlation between number of correct Standard sentence imitations and number of correct picture placements (rho = .67, $p < .05$), while the relationship between non-Standard repetitions and picture placement was not significant (rho = .02). A similar finding was obtained for whites. This startling and somewhat perplexing result needs further exploration with a larger subject population prior to drawing any firm conclusions.

Chapter VI

Dialect Distinctiveness

Correlational Data from the Recall Experiment

Tables 8 and 9 present the pairwise correlations of each structure (seven Standard and seven non-Standard structures) with every other structure. The top triangular matrix presents the correlations for the lower-class blacks, and just

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Insert Tables 8 and 9 about Here
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below it are the entries for the middle-class blacks. For example, the correlation of the Standard 3rd person singular with the Standard copula as calculated from the black lower-class Subjects is .59 while the comparable calculation for the middle-class blacks is given as .69. The lower triangular matrix presents the intercorrelations for all eight year old blacks and the entry just below it gives that for the ten year old blacks. Thus .67 is the correlation of Standard copula with Standard 3rd person singular based upon the eight year old black subjects, while that for the ten year olds is .38. Comparable data for white subjects is given in Table 9.

An examination of each of these triangular matrices reveals a very consistent pattern. Notice that the correlations of all Standard constructions with every other Standard construction is almost always positive. Similarly, the intercorrelations of every non-Standard construction with every remaining non-Standard construction is also virtually always positive. On the other hand, when we examine the correlations across dialects, we see that a large number of them tend to be negative. For example, for the lower-class blacks, the correlation of Standard "if" with non-Standard "if" is -.42. The same tendency for negative correlations to occur across dialects can also be seen when examining the data from the white subjects as Table 9 reveals.

This somewhat systematic effect can be interpreted as evidence that within a dialect, an internally consistent system of grammatical rules (and/or cognitive operations) is producing the positive correlations of each structure with every other structure in the same system. This leads us to assert that the behavioral data indicate the psychological reality of a non-Standard dialect and the separate psychological reality of a Standard dialect. This separability of the dialects is even found for speakers who know both dialects as Table 8 clearly reveals for black subjects. Many of the negative correlations across dialects indicate that some mutual conflict exists in moving from one dialect system to another, but, similar one. However, some exceptions to this finding can be observed. Non-Standard copula, double negation, and use of "be" appear to be somewhat positively related across dialects. This does not contradict the assertion that the non-Standard is an internally consistent dialect, it rather indicates the presence of complex linkages across the dialects.

Some Regression Results for Individual Grammatical Forms from the Imitation Study

In Table 12 the percent of variance accounted for by the 13 grammatical forms (plus socio-economic level as an additional 14th predictor variable) reveals that Standard dialect is more "predictable" overall than non-Standard. For example, Mann-Whitney U tests indicate that Standard forms are more predictable for the

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Insert Table 12 about Here
---

8 and 10 year old white children than non-Standard forms are for them ($U = 30$, $p = .002$, two-tailed). No significant difference in predictability was found for a comparable test using the 8 and 10 year old black children ($U = 76$, $p > .10$, two-tailed). This makes sense since it indicates that some blacks know the two dialects about "equally" well and so should not be significantly different from each other in their predictabilities from other grammatical forms in the systems. However, since the white children know primarily only one of the dialects, the Standard, it stands to reason that this dialect should be superior in its predictability than is the dialect which is only remotely or incompletely known to them.

The percentages of predictability along with indications of their significance levels can be found in Table 12.

Chapter VII

Conclusions

An overall analysis of the major independent variables used in this research, SES, race, age, and sex were not found to be equally robust. Sex was found to be the least important variable, while race and age were the most important. The finding on the race variable is in accord with Baratz (1969). Although she found age to be weaker than our data suggest. However, this may be due to the wider range of ages sampled in the current research. Our findings on SES effects partially agree with those reported by others (e.g., Osser, Wang, and Zaid, 1969).

In this report we have described a variety of tasks and measures. We now wish to point out some possible unifying themes that emerge from comparisons across these tasks and measures. Further, we wish to note some possible differences among them.

The recall task showed that blacks perform better than whites in terms of percentages correct when given stimulus sentences in non-Standard dialect. Whites performed better than blacks when stimulus sentences were in the Standard dialect. This agrees with Baratz' (1969) main finding.

Using measures other than proportion correct we have demonstrated that the rate of change from ages 8 to 10 shows that blacks are improving at the same rate as whites in the Standard dialect. Moreover, blacks improve at a significantly greater rate when responding to non-Standard dialect from the ages of 8 to 10. To our knowledge this represents a new finding. Employing another method of assessing the recall data, i.e., correlational analysis, revealed two additional findings: Standard and non-Standard dialects are internally consistent systems for both black and white subjects considered separately. Regression analysis of the recall data further indicated that the proportion of variance for Standard structures was more predictable for whites than were the non-Standard. For blacks, Standard and non-Standard were equally predictable.

The second major experiment was our source of data for language comprehension and production. The task used here involved message producers and message receivers. The producers could use any grammatical forms that they wished to get the receivers to perform. We found that black speakers used Standard and non-Standard expressions to the same degree regardless of whether their listener was white or black. A similar finding was observed for whites. For the comprehension side of this task we found that black and white listeners did equally well regardless of whether the message was delivered in Standard or non-Standard form. This too, appears to be a new finding of some importance. Using the measures employed in our research here, we observe that the races are equal both as message producers and comprehenders. This is in contrast to other research which suggests class differences and by implication race (see Bernstein, 1964; Williams and Naremore, 1969) to be operative in language functioning. We did note, however, age differences in this task. This would appear to support some prior findings (Krauss and Glucksberg, 1967).

For both black and white message producers, a positive correlation was found between the number of Standard forms repeated correctly and the number of spontaneously produced Standard structures. This suggests a common ability underlying these two tasks. A similar pattern was not found for non-Standard structures in either task. Future work relating comprehension scores with imitation is suggested by the findings reported here.

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APPENDIX

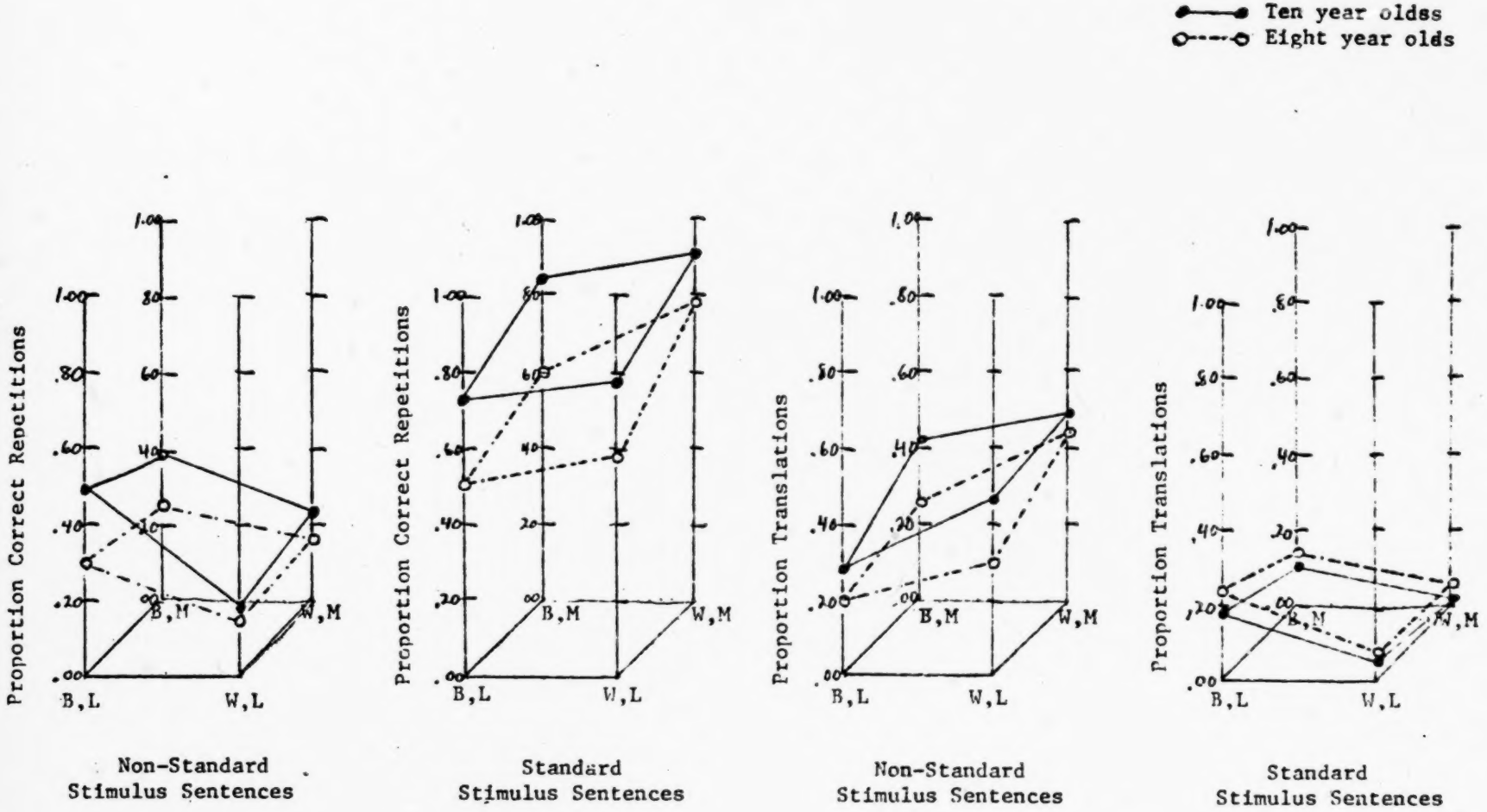

Figure 2. The Proportion of correct repetitions and proportion of translations over all grammatical forms for standard and non-standard English dialects.

Table 2

Some Examples of Syntactic Differences Between Standard and Non-Standard English[1]

Variable	Standard English	Black Non-Standard English
1. Linking verb (copula)	He is going.	He __ goin'.
2. Possessive marker	John's cousin.	John_ cousin.
3. Plural marker	I have five cents.	I got five cent_.
4. 3rd person singular (verb agreement)	He lives in New York.	He live_ in New York.
5. Past marker	Yesterday he walked home.	Yesterday he walk__ home.
6. "If" construction	I asked if he did it.	I ask did he do it.
7. Negation	I don't have any.	I don't got none.
8. Use of "be"	Statement: He is here all the time.	Statement: He be here.
9. Subject expression	John moved.	John, he move.
10. Verb form	I drank the milk.	I drunk the milk.
11. Future form	I will go home.	I'ma go home.
12. Indefinite article	I want an apple.	I want a apple.
13. Pronoun form	We have to do it.	Us got to do it.
14. Pronoun expressing possession	His book.	He book.
15. Preposition	He is over at John's house.	He over to John house.
	He teaches at Francis Pool.	He teach__ Francis Pool.
16. Use of "do"	Contradiction: No, he isn't.	Contradiction: No, he don't.

[1]This table is adapted from one presented by Joan Baratz, 1969, pp. 99-100.

Table 3

Regression Results Using All Subjects for Evaluating Four Independent Variables (SES, Race, Sex, and Age)

	t-scores for each predictor variable			
Name of Dependent Variable	Race	Social Class	Sex	Age
Standard, 3rd person singular	4.8	5.5	-1.4	14.8
Standard, copula	0.6	3.7	0.2	16.1
Standard, negation	1.0	3.9	-1.5	8.3
Standard, "if"	6.8	4.7	0.0	0.3
Standard, possessive	3.3	4.8	-1.4	10.6
Standard, plural	1.2	2.8	-0.8	11.0
Non-Standard, 3rd person singular	-12.0	-2.2	1.8	-1.2
Non-Standard, copula	-7.6	-1.0	0.6	- 4.0
Non-Standard, negation	-8.8	0.0	0.6	2.9
Non-Standard, "if"	-12.7	-3.1	0.9	6.5
Non-Standard, possessive	-6.8	-0.2	-0.2	1.6
Non-Standard, use of "be"	-8.3	-0.7	-0.4	-1.5

Table 4

The effect of Race and SES Levels on Proportion of Correct Repetitions and Proportion of Translations for Standard and Non-Standard Stimuli

Type of Stimulus Sentence	Type of Response	Eight Year Old Blacks		Eight Year Old Whites	
		Lower	Middle	Lower	Middle
Standard English	Correct Repetition	.501	.595	.584	.791
Non-Standard English	Translation[1]	.198	.244	.287	.444
Non-Standard English	Correct Repetition	.300	.298	.134	.129
Standard English	Translation	.217	.145	.075	.058

		Ten Year Old Blacks		Ten Year Old Whites	
		Lower	Middle	Lower	Middle
Standard English	Correct Repetition	.716	.829	.784	.897
Non-Standard English	Translation	.293	.410	.463	.495
Non-Standard English	Correct Repetition	.460	.377	.174	.217
Standard English	Translation	.195	.103	.056	.026

[1]By a translation response when the stimulus sentence is given in standard English we mean that the subject has converted the standard form into its equivalent non-standa representation; similarly, if the subject converts a non-standard stimulus sentence into a standard form a translation is also said to have occurred.

Table 5

Rank Order Correlation Between Number of Standard (or Non-Standard) Forms Used Correctly and Number of Translations From Non-Standard (Standard) into Standard (Non-Standard) for Two Age Groups

Grammatical Form[1]	Correlation for Age 8 (N=8)	Correlation for Age 10 (N=8)
3rd person singular	.98 ** ($p < .01$)	.79 * ($p < .05$)
Copula	.88 **	.82 *
Negation	-.60	-.57
"If" + S + V	.99 **	.90 **
Past marker	.93 **	.98 **
Possessive	.98 **	.81 *
Plural (standard form only)[2]	.74 * (both age groups combined)	
Use of "be" (non-standard only)	.72 * (both age groups combined)	

[1]There were eight entries upon which each correlation was based: e.g., letting c represent a correct proportion and letting t represent a translation the following eight pairs of entries were used in the correlation: lower black standard c (lo,bl,st,c) with lower black non-standard t (lo, bl, ns, t), then (lo,bl,ns,c) with (lo,bl,st,t), then (mid,bl,st,c) with (mid,bl,ns,t), then (mid,bl,ns,c) with (mid,bl,st,t), then (lo,wh,st,c) with (lo,wh,ns,t), then (lo,wh,ns,c) with (lo,wh,st,t), then (mid,wh,st,c) with (mid,wh,ns,t), and finally (mid,wh,ns,c) with (mid,wh,st,t).

[2]Only Plurals were scored for standard sentences and only use of "be" was scored for non-standard sentences, hence to increase n size we combined over ages here.

Table 6

Proportion of Correct Repetitions (C), Translations (T), and Deletions (D) for Grammatical Forms in Standard (S) and Non-Standard (NS) Stimulus Sentences as a Function of Race, SES, and Age

Stimulus and Response Types		Age 8				Age 10			
		Bl Lo	Bl Mid	Wh Lo	Wh Mid	Bl Lo	Bl Mid	Wh Lo	Wh Mid
3rd person sing.:									
S	C	.350	.538	.525	.800	.654	.842	.762	.892
NS	C	.420	.308	.129	.079	.392	.296	.158	.183
S	T	.304	.196	.108	.071	.242	.100	.079	.029
NS	T	.225	.333	.346	.679	.371	.204	.646	.642
S	D	.346	.267	.367	.129	.104	.058	.158	.079
NS	D	.354	.358	.525	.242	.238	.200	.196	.175
Copula:									
S	C	.657	.676	.652	.786	.824	.924	.786	.895
NS	C	.200	.150	.033	.042	.242	.192	.042	.100
S	T	.057	.024	.005	.000	.024	.000	.005	.000
NS	T	.325	.317	.408	.492	.533	.592	.592	.750
S	D	.286	.300	.343	.214	.152	.076	.210	.105
NS	D	.475	.533	.558	.467	.142	.133	.367	.150
Negation:									
S	C	.400	.511	.433	.567	.600	.700	.600	.789
NS	C	.381	.324	.210	.181	.552	.486	.252	.348
S	T	.389	.289	.311	.300	.333	.267	.233	.167
NS	T	.043	.052	.052	.105	.062	.110	.110	.114
S	D	.211	.200	.256	.133	.178	.033	.167	.044
NS	D	.576	.624	.738	.714	.386	.595	.638	.538
Use of "IF"									
S	C	.083	.233	.433	.800	.267	.467	.800	.917
NS	C	.883	.583	.250	.083	.817	.583	.150	.100
S	T	.750	.567	.200	.083	.683	.433	.083	.033
NS	T	.000	.183	.350	.667	.067	.317	.700	.867
S	D	.167	.200	.367	.117	.050	.100	.117	.050
NS	D	.117	.233	.400	.250	.117	.100	.150	.033

Table 6 (cont'd.)

Stimulus and Response Types		Age 8				Age 10			
		Bl Lo	Bl Mid	Wh Lo	Wh Mid	Bl Lo	Bl Mid	Wh Lo	Wh Mid
Past marker:									
S	C	.753	.786	.780	.913	.780	.893	.920	.967
NS	C	.473	.400	.193	.247	.553	.520	.293	.300
S	T	.140	.080	.013	.013	.173	.100	.013	.000
NS	T	.347	.320	.413	.520	.387	.393	.573	.613
S	D	.107	.133	.207	.073	.047	.007	.067	.033
NS	D	.180	.280	.393	.233	.060	.087	.067	.020
Possessive:									
S	C	.300	.467	.483	.800	.883	.783	.683	.867
NS	C	.250	.150	.033	.050	.467	.250	.067	.183
S	T	.250	.150	.017	.033	.300	.100	.050	.000
NS	T	.167	.267	.283	.433	.333	.467	.383	.433
S	D	.450	.383	.500	.167	.117	.117	.267	.133
NS	D	.583	.583	.683	.517	.200	.283	.550	.383
Plural marker:									
S	C	.600	.633	.575	.792	.800	.858	.833	.908
S	T	.008	.017	.000	.008	.025	.008	.008	.000
S	D	.392	.350	.425	.200	.175	.133	.158	.092
Use of "be":									
NS	C	.292	.183	.033	.142	.358	.317	.117	.142
NS	T	.217	.250	.267	.317	.275	.608	.367	.308
NS	D	.492	.567	.700	.542	.367	.075	.517	.550

Table 7

The Frequency of Occurrence of Standard (S) and Non-Standard (NS) Forms in the Free Productions of Speakers from Three Age Groups, Two Races, and Two SES Levels as a Function of the Race and SES Level of their Listeners

Characteristics of Speaker			Race and SES Level of Listener							
			Black Lower		Black Middle		White Lower		White Middle	
Age	Race	SES	S	NS	S	NS	S	NS	S	NS
5	black	lower	1	2	0	0	0	0	8	1
5	"	"	1	5	1	5	0	8	2	4
5	black	middle	2	0	0	6	0	5	0	3
5	"	"	1	0	0	0	0	0	0	0
5	white	lower	6	0	8	0	6	0	6	0
5	"	"	6	0	0	0	0	0	7	0
5	white	middle	6	0	5	0	6	0	6	0
5	"	"	7	0	7	0	6	0	8	0
8	black	lower	9	0	9	1	9	0	12	1
8	"	"	6	1	6	1	6	0	5	0
8	black	middle	10	1	4	1	9	0	10	1
8	"	"	8	0	8	0	2	0	12	0
8	white	lower	12	0	28	1	30	0	14	0
8	"	"	7	0	13	0	8	0	6	1
8	white	middle	6	1	22	0	28	0	11	0
8	"	"	29	0	43	3	18	1	25	0
10	black	lower	7	0	32	1	9	3	10	2
10	"	"	3	8	10	2	6	11	1	11
10	black	middle	8	0	15	1	8	4	9	0
10	"	"	43	14	17	1	41	0	21	0
10	white	lower	1	0	21	0	19	1	13	0
10	"	"	6	0	19	1	18	3	4	1
10	white	middle	10	0	13	0	14	0	11	0
10	"	"	48	1	44	4	49	3	56	0

Table 8

Intercorrelation of Seven Standard and Seven Non-Standard Grammatical Forms for Eight and Ten Year Old Blacks and Lower and Middle SES Blacks[1]

		(Standard Structures)							(Non-Standard Structures)						
		3rd	Con	Neg	If	Past	Poss	Plur	3rd	Con	Neg	"If"	Past	Poss	"Be"
(Standard Forms)	3rd		..59 .60	.51 .64	.35 .52	.38 .57	.59 .54	.62 .67	-.31 -.28	.27 .34	.25 .42	-.09 -.08	.02 .10	.19 .13	.34 .33
	Con	.67 .38		.32 .61	.26 .41	.35 .50	.46 .60	.56 .74	.01 .08	.33 .31	.37 .52	-.06 .11	.11 .38	.12 .25	.38 .43
	Neg	.63 .43	.62 .13		.03 .47	.26 .53	.53 .47	.26 .54	-.25 -.02	.14 .28	.07 .30	-.02 -.06	.01 .13	.14 .14	.05 .13
	If	.35 .47	.31 .26	.28 .18		.20 .41	.25 .36	.25 .36	-.23 .06	.17 .28	.11 .24	-.42 -.54	.11 .33	-.14 .09	.05 .29
	Past	.54 .34	.62 -.05	.45 .27	.30 .34		.31 .32	.36 .52	.01 -.16	.08 .14	.15 .32	-.07 -.07	.12 -.05	.09 .12	.07 .06
	Poss	.57 .45	.55 .35	.53 .39	.22 .32	.33 .27		.33 .50	-.30 -.04	.01 .33	.22 .40	-.28 -.07	-.03 .33	-.02 .02	.04 .24
	Plur	.58 .54	.73 .26	.45 .19	.28 .23	.52 .21	.32 .37		.00 .06	.32 .28	.35 .51	.10 .20	.13 .18	.11 .15	.35 .43
(Non-Standard Forms)	3rd	.19 -.56	.15 -.11	-.03 .27	-.04 -.16	.12 -.45	-.08 -.32	.24 -.26		.04 .17	.34 .23	-.41 .06	.18 .33	.14 .20	.19 .40
	Con	.29 .20	.37 .19	.26 .09	.14 .20	.12 .01	.23 .02	.35 .18	.31 -.03		.56 .36	.23 -.02	.22 .21	.07 .22	.31 .43
	Neg	.42 -.20	.51 .04	.27 -.17	.14 -.04	.33 -.13	.37 -.07	.50 .02	.39 .28	.49 .45		.27 -.06	.39 .32	.19 .44	.45 .56
	"If"	-.07 -.29	.19 -.22	-.03 -.13	-.33 -.71	.10 -.43	-.11 -.32	.29 -.04	.38 .19	.31 -.05	.18 .11		.23 -.05	.25 -.04	.19 -.02
	Past	.02 .19	.35 -.07	.26 -.24	.15 -.15	.13 -.21	.27 -.08	.29 -.10	.29 .32	.33 .20	.32 .33	.30 -.01		.42 .26	.16 .40
	Poss	.22 .24	.26 -.22	.13 -.08	-.03 -.26	.17 -.27	.15 -.42	.15 -.17	.05 .20	.16 .12	.21 .28	.22 .18	.35 .30		.32 .41
	"Be"	.37 .01	.43 .21	.23 -.16	.06 .11	.19 -.28	.19 -.12	.41 .22	.24 .47	.48 .27	.50 .45	.19 .06	.26 .28	.36 .32	--

[1]Each correlation is based upon N=60. In the upper triangular matrix the value from the lower class is given above that of the middle class while in the lower triangular matrix the eight year olds' data is above that of the ten year olds' data.

Table 9

Intercorrelation of Seven Standard and Seven Non-Standard Grammatical Forms[1]

for Eight and Ten Year Old Whites and Lower and Middle SES Whites

(-- Non-Standard Forms --) (---- Standard Forms ------)

	(-------- Standard Structures ----------)							(---------- Non-Standard Structures ----)						
	3rd	Cop	Neg	If	Past	Poss	Plur	3rd	Cop	Neg	"If"	Past	Poss	"Be"
3rd		.69	.56	.60	.58	.60	.70	.04	.19	.25	-.14	.11	.10	.46
		.56	.56	.40	.50	.49	.43	-.16	.00	.17	-.20	-.04	.21	.03
Cop	.71		.50	.42	.67	.64	.57	.09	.22	.36	.09	.16	.08	.30
	.55		.47	.22	.40	.53	.45	.10	.15	.35	.08	.01	.27	.06
Neg	.54	.42		.55	.38	.40	.46	.09	.13	.18	-.20	-.04	.19	.29
	.54	.55		.41	.35	.35	.29	.00	.08	-.10	-.22	.05	.23	.04
If	.51	.40	.49		.50	.35	.52	.10	.05	.24	-.43	.02	-.08	.34
	.65	.29	.42		.39	.32	.20	.00	.12	.01	-.47	-.05	.14	-.01
Past	.67	.70	.34	.53		.51	.67	.12	.09	.37	.08	.17	.08	.22
	.29	.34	.33	.30		.38	.40	-.16	-.05	.09	-.23	-.01	.23	.02
Poss	.59	.69	.36	.34	.59		.58	-.06	.18	.11	.00	.03	.06	.38
	.62	.52	.45	.49	.26		.30	.10	.15	.30	-.02	-.02	.16	.13
Plur	.66	.58	.34	.46	.70	.58		.15	.18	.47	-.08	.11	.09	.37
	.53	.41	.39	.30	.27	.40		.15	.22	.30	.02	.13	.34	.10
3rd	-.17	-.02	.06	.15	.06	-.06	.06		.26	.24	.03	.18	.23	.14
	-.10	.04	-.14	-.27	-.23	-.04	.05		.58	.46	.31	.44	.50	.55
Cop	.02	.10	.05	.10	.03	.12	.20	.33		.38	.02	.04	.37	.50
	.20	.28	.14	.05	.04	.24	.18	.45		.34	.22	.34	.33	.40
Neg	.19	.32	.04	.15	.26	.19	.35	.30	.20		-.03	.13	.12	.19
	.13	.29	-.12	-.02	.12	.17	.30	.38	.43		.09	.36	.54	.42
"If"	-.11	.07	-.27	-.43	.16	.04	.07	-.02	.00	.03		.22	.24	-.02
	-.33	-.02	-.16	-.55	-.39	-.20	-.36	.31	.16	.02		.39	.19	.22
Past	.01	.07	.00	.03	.11	.04	.10	.14	.15	.30	.17		.07	.24
	.03	.05	-.06	-.15	.03	-.04	.04	.38	.23	.20	.38		.33	.52
Poss	.17	.15	.20	.14	.20	.12	.18	-.01	.19	.27	.03	-.02		.17
	.14	.19	.22	-.10	.06	.14	.22	.50	.40	.43	.29	.33		.45
"Be"	.25	.15	.24	.25	.26	.27	.22	.16	.30	.22	-.09	.43	.11	
	.31	.27	.06	.13	-.03	.30	.31	.47	.54	.41	.19	.37	.49	

[1] Each correlation is based upon N= 60. In the upper triangular matrix the value from the lower class is given above that of the middle class while in the lower triangular matrix, the eight year olds' data is above that of the ten year olds' data.

Table 10

The Structure Most Similar to Each of the Non-Standard Forms

Non-Standard Form	Largest Positively Related Form			
	Eight Year Old Blacks	Ten Year Old Blacks	Eight Year Old Whites	Ten Year Old Whites
3rd person sing.	NS, Neg.	NS, "be"	NS, 3rd per.	NS, Poss.
copula	NS, Neg.	NS, Neg.	NS, "be"	NS, "be"
Negation	S, Cop. (NS, "be")[1]	NS, "be" (NS, Cop.)[2]	S, Plural	NS, Cop. (NS, Poss.)[2]
"If"	NS, 3rd per.	NS, 3rd pers.	NS, Past	NS, Past
Past	NS, Poss.	NS, Neg. (NS, 3rd pers)[2]	NS, "be"	NS, "If" (NS, 3rd pers.
Possessive	NS, "be"	NS, 3rd pers.	NS, Neg.	NS, "be" (NS, 3rd pers
Use of "be"	NS, Neg.	NS, 3rd pers.	NS, Past	NS, Cop.

[1]The largest positively correlated variable happened to be a Standard grammatical form; since this was unexpected the closest Non-Standard Form was also listed if it was within .01 units of the largest positive correlation.

[2]Occasionally, two non-standard forms were almost equally correlated with the non-standard form; in this case both non-standard forms have been listed.

Table 11

The Structure Most Similar to Each of the Standard Forms

Standard Form	Largest Positively Related Form			
	Eight Year Old Blacks	Ten Year Old Blacks	Eight Year Old Whites	Ten Year Old Whites
3rd person sing.	S, copula	S, Plural	S, Copula	S, If
Copula	S, Plural	S, 3rd pers.	S, 3rd pers.	S, 3rd pers.
Negation	S, 3rd pers.	S, 3rd pers.	S, 3rd pers.	S, Copula
If + S + V	S, 3rd pers.	S, 3rd pers.	S, 3rd pers.	S, 3rd pers.
Past	S, 3rd pers.	S, 3rd pers.	S, Copula	S, Copula
Possessive	S, 3rd pers.	S, 3rd pers.	S, Copula	S, 3rd pers.
Plural	S, Copula	S, 3rd pers.	S, Past	S, 3rd pers.

Table 12

Percent Variance Accounted for in Predicting Each of Fourteen Grammatical Forms from the Remaining Forms (plus SES as a Predictor)

Dependent Variable in Regression	Percent Variance Accounted for			
	Data of Eight Yr. Old Blacks	Data of Ten Yr. Old Blacks	Data of Eight Yr. Old Whites	Data of Ten Yr. Old Whites
Standard:				
3rd pers.	76.9%	69.5%	72.9%	67.7%
Copula	76.4	35.7 n.s.[1]	72.1	60.7
Negation	53.0	34.2 n.s.	48.2	60.6
If + S + V	37.6	67.9	61.9	62.8
Past	48.7	43.1	74.1	39.4
Possessive	49.9	47.9	57.2	47.6
Plural	66.9	41.4	65.8	49.4
Non-Standard:				
3rd pers.	44.6	59.7	33.3 n.s.	50.9
Copula	42.4	36.4 n.s.	28.7 n.s.	42.7
Negation	54.0	44.4	41.0	50.0
Use of "If"	51.0	63.1	47.4	65.6
Past	46.0	34.7 n.s.	33.0 n.s.	35.6 n.s.
Possessive	27.7 n.s.	46.7	20.0	54.7
Use of "be"	47.8	53.9	40.8	57.3

[1]The entries followed by n.s. indicates that the multiple correlation upon which the proportion variance accounted for is based failed to be significant ($p > .05$) In all cases the F test was based on (14, 45) degrees of freedom. All other entries were significant beyond the .05 level.